

GEO Initiatives in Forest Monitoring: from the Forest Carbon Tracking – FCT task to the Global Forest Observations Initiative – GFOI

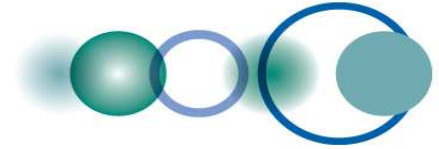
Giovanni Rum, GEO Secretariat

COP 17 Side event

Forest and Carbon initiatives of
the Group on Earth Observations (GEO)
2 December 2011 from 14.00 to 16.00
Room Umfolozi
Durban, CCR Expo Convention Center

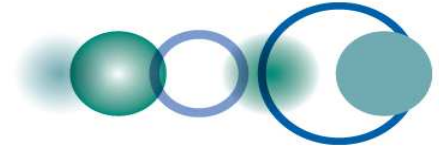


The need



COP 15 in Copenhagen and COP 16 in Cancun have confirmed that comprehensive, continuous and systematic information on forests is needed to underpin national Measurement, Monitoring, Reporting and Verification (MRV) Systems for REDD+ implementation. The Conference also invited developing countries to move towards implementing these systems, taking into account the need and the opportunity of using all available observations (from satellite Remote Sensing data to ground measurements).



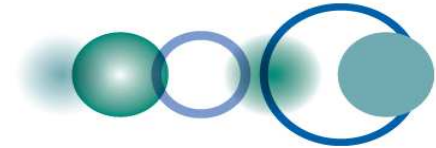


The GEO Forest Carbon Tracking Task

GEO established in 2008 the Forest Carbon Tracking (FCT) task to support countries in developing their national MRV systems. The FCT overall goal is to test and compare the use of various observations, models, tools and methodologies in order to:

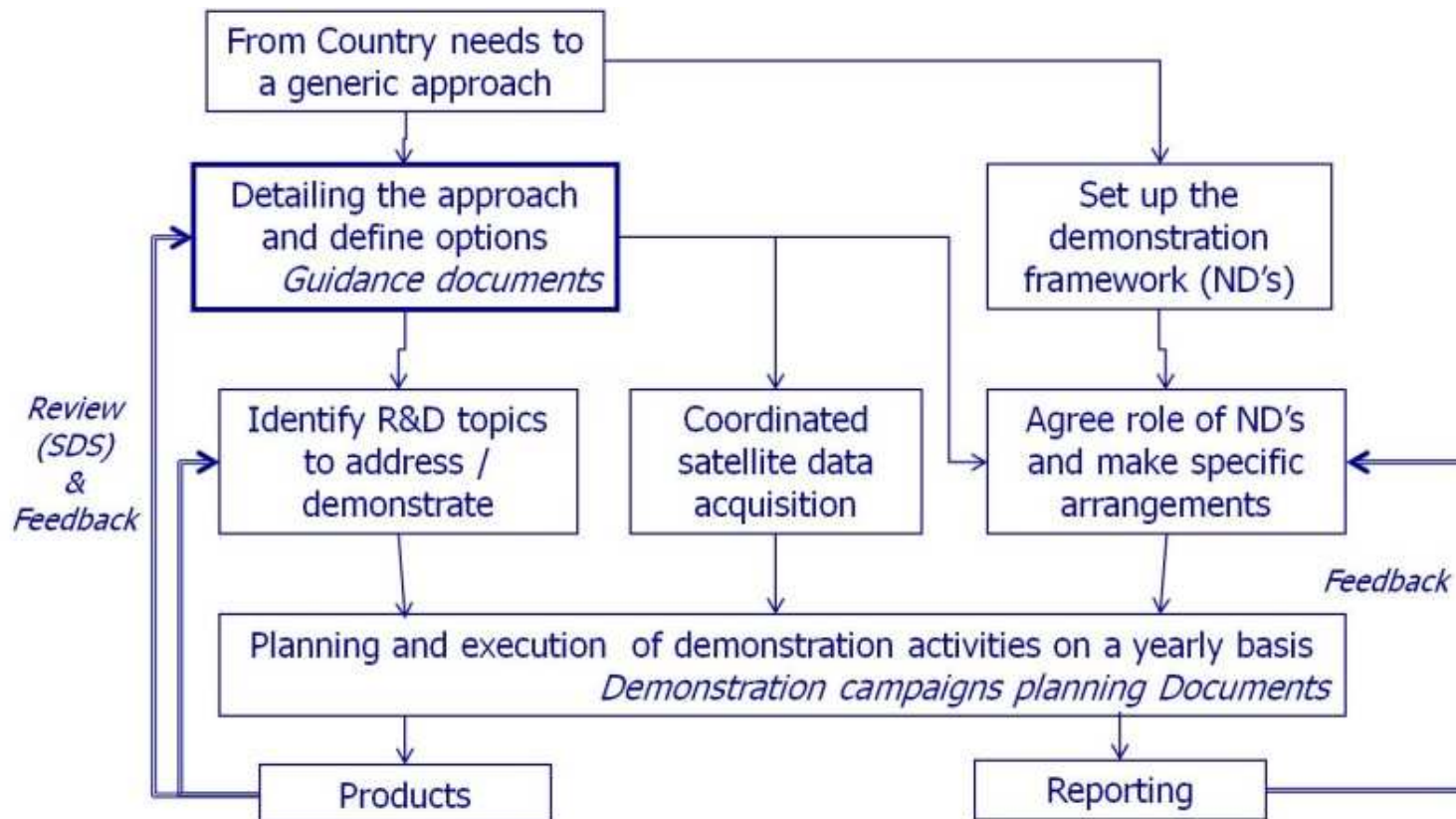
- demonstrate that coordinated Earth Observations, validated by in situ measurements and properly linked to modeling can provide reliable, accurate, consistent and continuous information
- provide options, advice and guidelines to Countries willing to implement national systems.

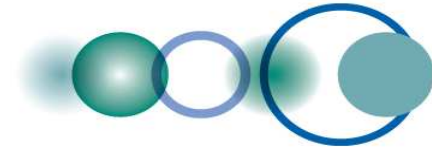




FCT approach and activities

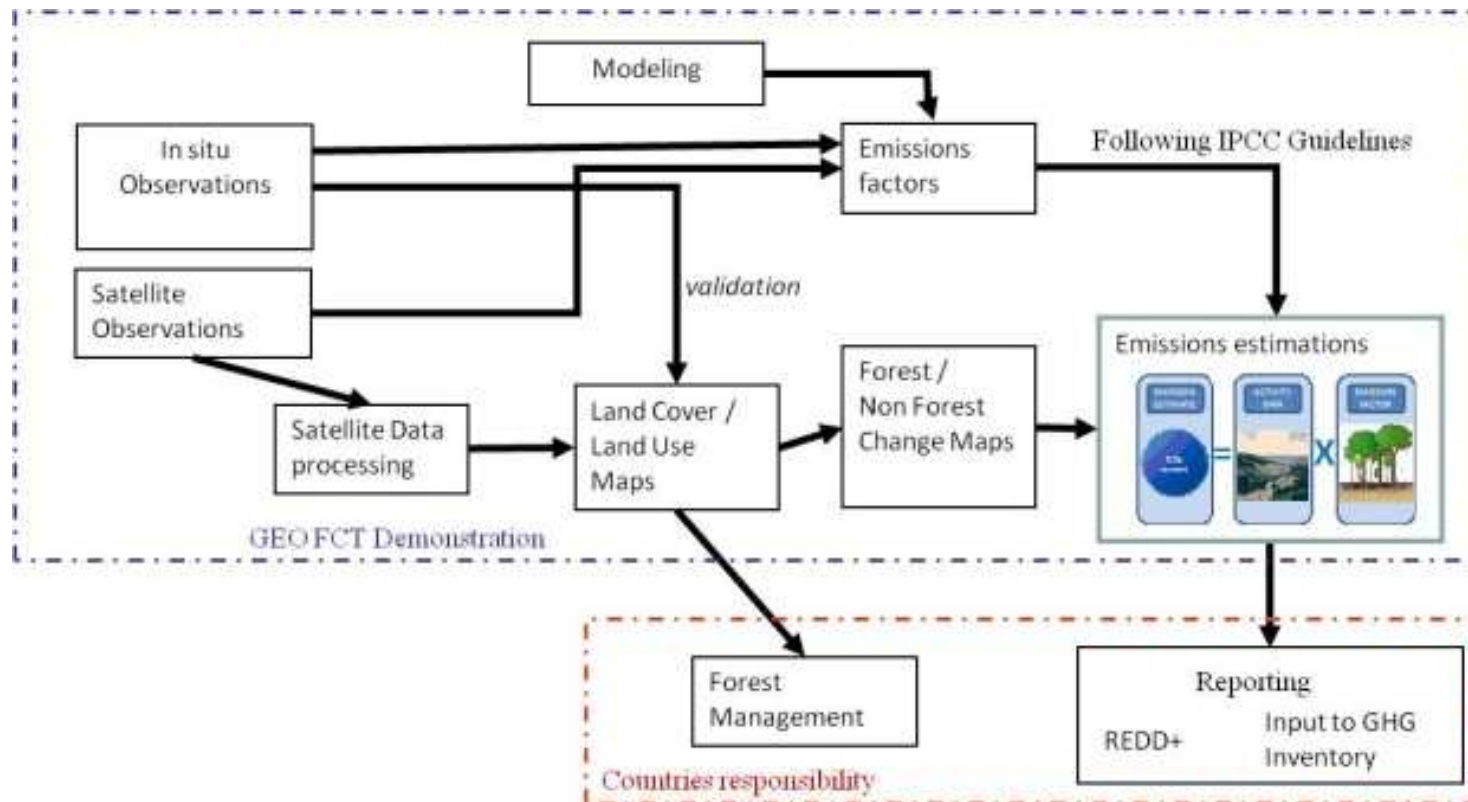
To meet the objectives and ensure suitable end-to-end demonstrations, GEO FCT has built a cooperating framework, which is progressively involving the scientific and technical community, the space community and countries willing to implement MRV systems for REDD+.

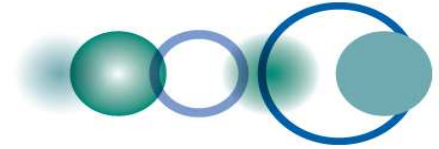




Monitoring approach

A yearly, wall-to-wall, medium-resolution (25-30 m) monitoring approach, compliant with IPCC guidelines, has been identified as the best suited to cover a wide range of potential outcomes of the policy-framework negotiations.





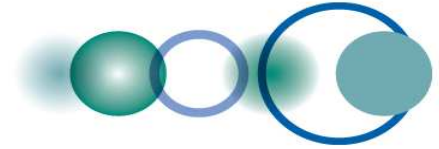
Guidance Documents

Guidance documents identify the monitoring approach, associated options and implications on how to deal with the key issues scientific and technical and constitute the drivers for the test and demonstration activities, which, in turn, provide feedback for the refinement and improvement of the documents them self.

Documents under preparation

- Satellite Forest Information Product Specification
- Satellite Interoperability & Processing Methods
- *In Situ* Forest Measurements Standards and Protocol
- Uncertainty assessment on carbon estimation
- Linking of In Situ Forest Measurements, Remote Sensing and Carbon Models

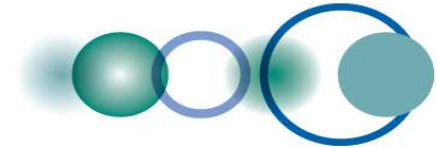




Key scientific and technical issues

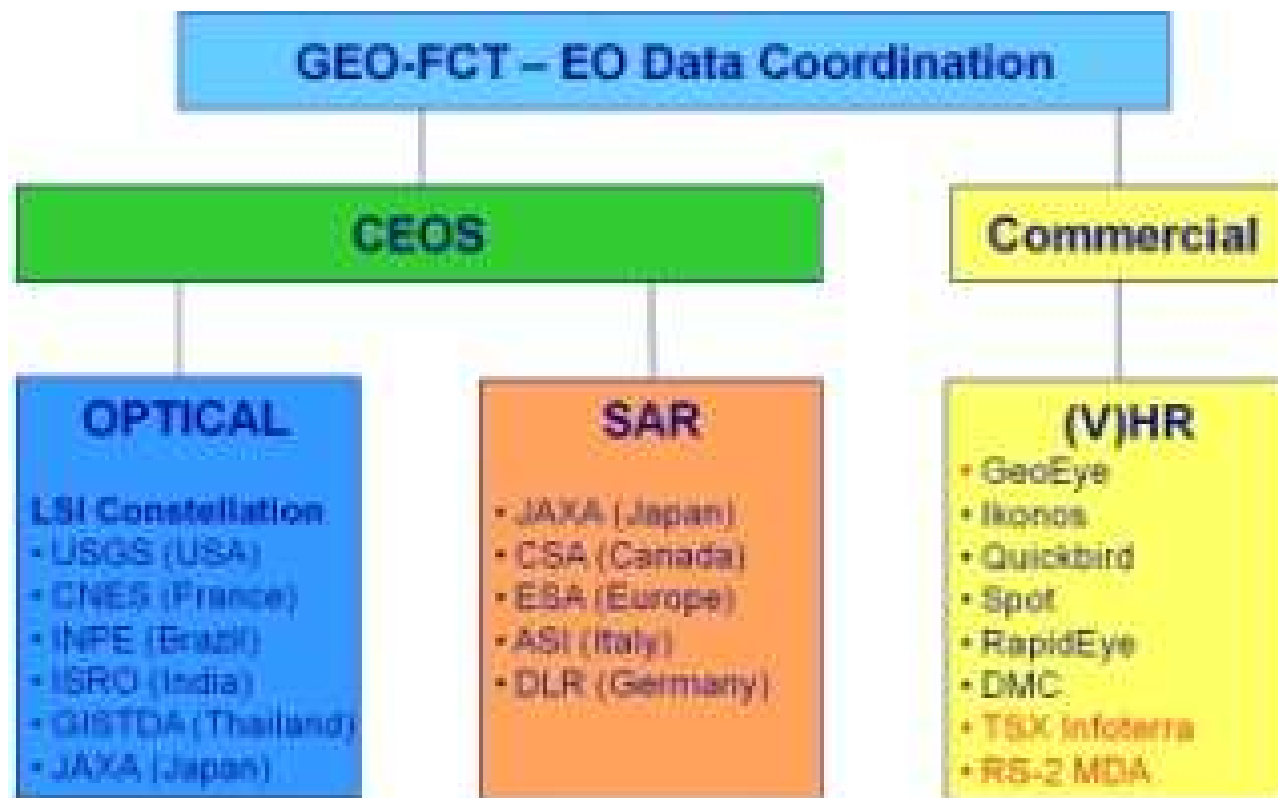
- Consolidation of widely agreed information products
- Identification and testing of new products addressing the full range of REDD+ objectives
- Interoperability and complementarity of observations, inclusion of new remote sensing sensors
- Buildup of consistent time series
- Comparable processing to land cover/land use and forest mapping and carbon assessment methodologies
- Products validation /uncertainty assessment





Satellite data acquisition coordination

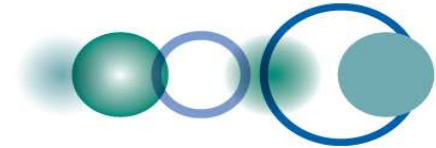
The Committee on Earth Observation Satellites (CEOS) is ensuring since 2009 coordination of data acquisition and access. Involvement of commercial satellite data providers is also ensured



Forest Carbon Tracking

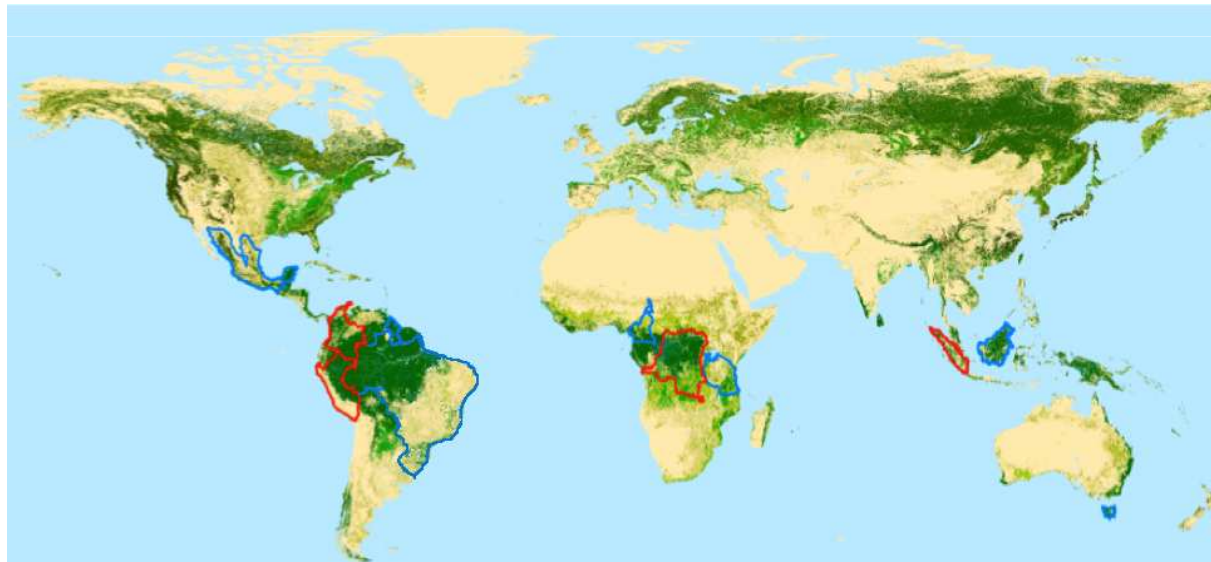
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National Demonstrators

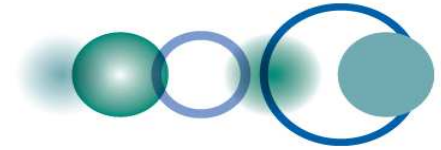
The Task has established a number of reference demonstration areas – “National Demonstrators” for developing and testing approaches and methodologies. They cover the whole country or areas within the country that are large enough to demonstrate the wall-to-wall capability; they include several test/validation sites, typically circular, with 20 Km radius.



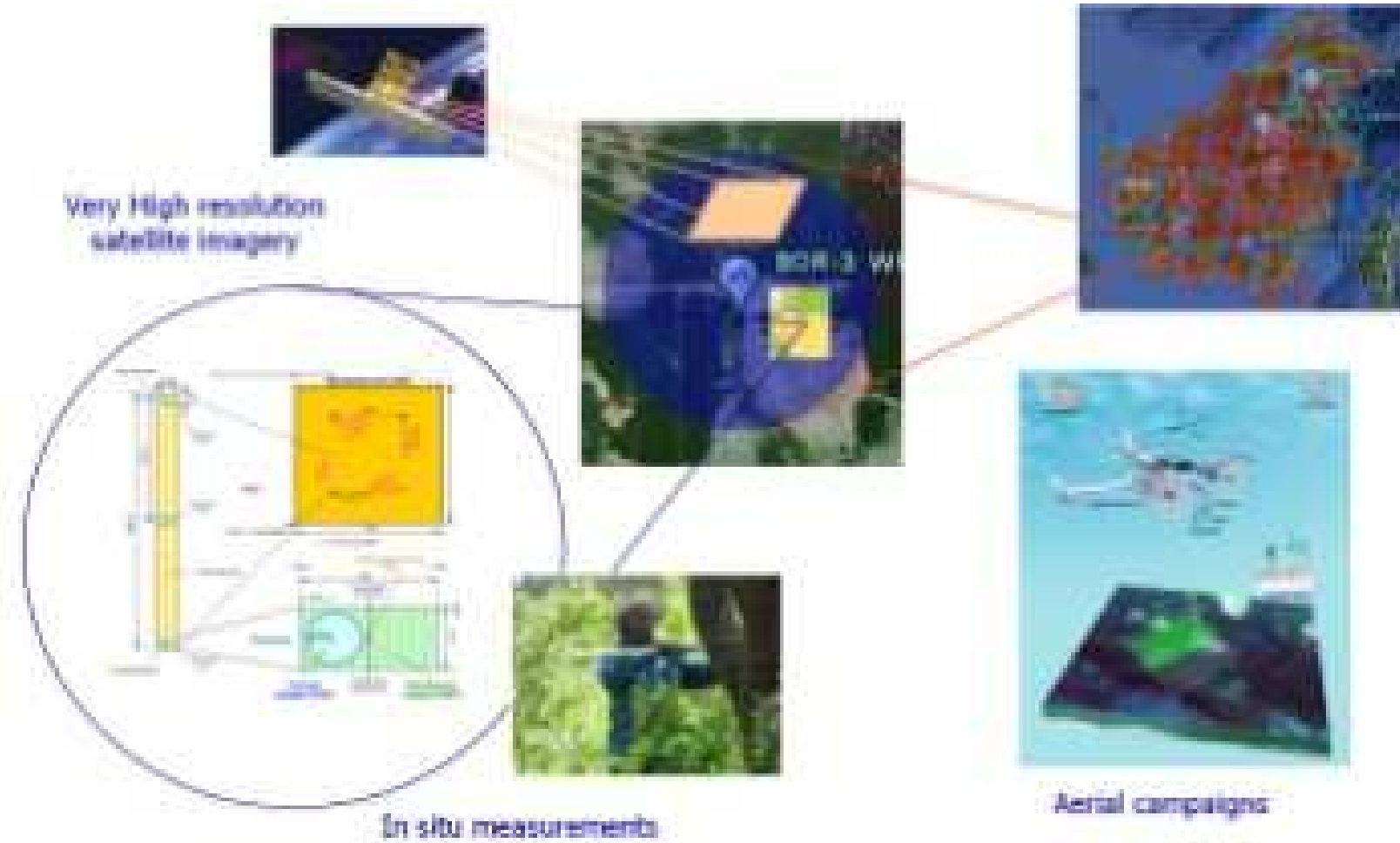
11 ND Countries

**Australia (Tasmania),
Brazil (legal Amazon),
Cameroon, Colombia,
DR Congo, Guyana,
Indonesia (Kalimantan
and Sumatra), Mexico,
Nepal, Peru and
Tanzania**



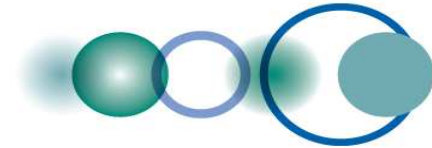


Validation sites



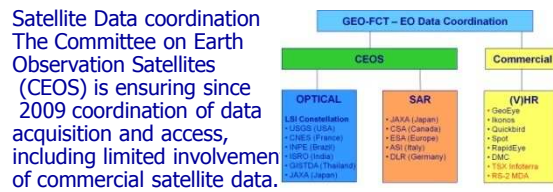
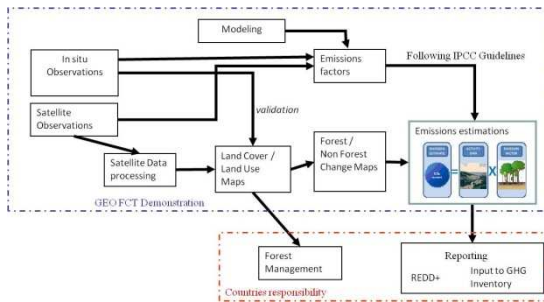
65 Validation sites in
11 countries





The GEO FCT main components

A yearly, wall-to-wall, medium-resolution (25-30 m) monitoring approach, compliant with IPCC guidelines, has been identified as the best suited to cover a wide range of potential outcomes of the policy-framework negotiations.

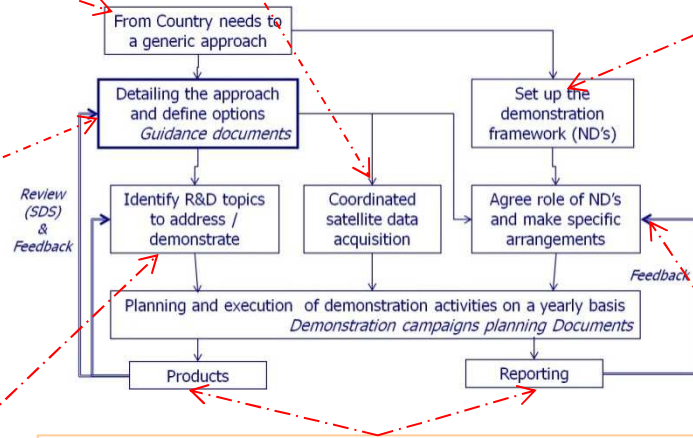


National Demonstrators (ND)
The Task has established a number of reference demonstration areas – “National Demonstrators” for developing and testing approaches and methodologies. They cover the whole country or areas within the country that are large enough to demonstrate the wall-to-wall capability; they include several test/validation sites.. 11 ND Countries
Australia (Tasmania), Brazil (legal Amazon), Cameroon, Colombia, DR Congo, Guyana, Indonesia (Kalimantan and Sumatra), Mexico, Nepal, Peru and Tanzania

FCT Guidance Documents
Guidance documents identify the monitoring approach, associated options and implications on how to deal with the key issues scientific and technical and constitute the drivers for the test and demonstration activities, which, in turn, provide feedback for the refinement and improvement of the documents them self.

FCT – addressed key Issues

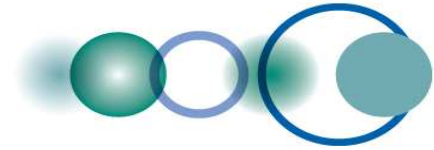
- Consolidation of widely agreed forest information products
- Identification and testing of new products addressing the full range of REDD+ objectives
- Interoperability and complementarity of satellite sensors
- Buildup of consistent time series
- Processing to comparable land cover/land use and forest mapping and carbon assessment methodologies
- Products validation /uncertainty assessment



Product Development Teams
A “Product Development Team” supports each Country in product generation and validation and capacity building activities form an integral part of FCT plans in each ND.

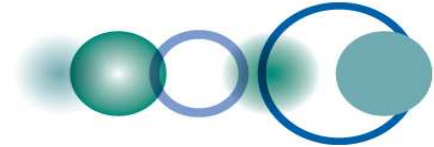


Forests play a key role in many Societal Benefit Areas



THE GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS





Co-leads

- Norway (NSC)
- Japan (JAXA)
- Australia (Department of Climate Change & CSIRO)
- Canada (CFS-CSA)
- USA (USGS)
- FAO
- CEOS (ESA)

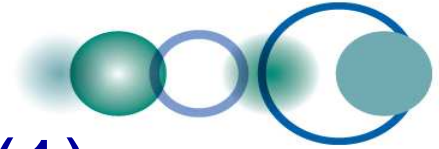
Additional partners

contributing space and forest research data and expertise are Brazil, France, the Netherlands, United Kingdom, European Commission and GOFC-GOLD.

The GEO Secretariat supports activities coordination and facilitate their execution.

Including the 11 National Demonstrators, Organizations from more than 30 Countries are contributing to the GEO task.





FCT-Progress to date (1)

Since 2008 significant progress has been achieved, even if some additional effort are needed in the following areas:

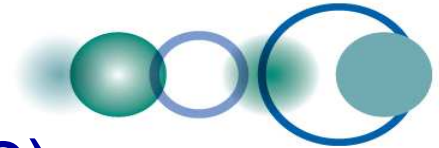
Guidance documents definition,

Work on models and methodologies for carbon change assessment

Improve coordination with other global initiative (such as UN-REDD and World Bank FCPF)

Consolidate activities planning in each ND, and work to bring to a comparable level the activities in each ND.

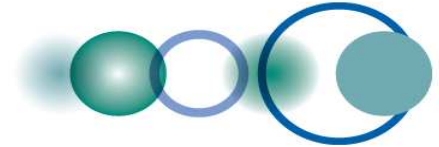




FCT-Progress to date (2)

- FCT Guidance documents identified and being produced
- Work on methods and protocols on going
- GEO FCT data portal online www.geo-fct.org
- 2009-2010-2011 satellite data acquisition performed and data being made available to Countries and Processing Teams (about 64000 scenes acquired in 2010 only)
- In situ measurements at the VS on-going
- Product Development Teams to support National Demonstrators Countries data processing established and working





Towards sustained capabilities

- Significant progress was made in 2009 & 2010 for FCT
- but need to move from preliminary activities to more comprehensive, consistent and continuous forest observations, setting up permanent solutions to issues like data policies, satellite availability, transition from demonstration to operations, ...

One additional important step was taken in Beijing in November 2010 GEO VII Plenary approved the planning of the Global Forest Observations Initiative (GFOI) and asked for an implementation plan to be submitted to GEO VIII.





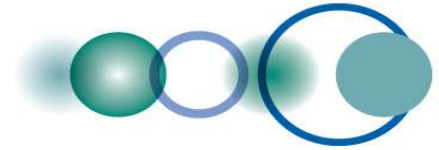
GEO VIII Plenary decisions

Meeting in Istanbul on 16-17 November 2011, the GEO Plenary:

- Endorsed the *GFOI Implementation Plan*;
- Agreed to perform a GFOI Start-up Phase, in 2012 and to accept contributions from Members and Participating Organizations;
- Requested to develop proposals for long term GFOI hosting, governance and future budgets for the GEO-IX Plenary, and to facilitate the preparation of an applications development plan and an observations acquisition strategy.

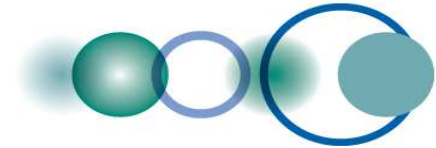


GEO FCT and GFOI



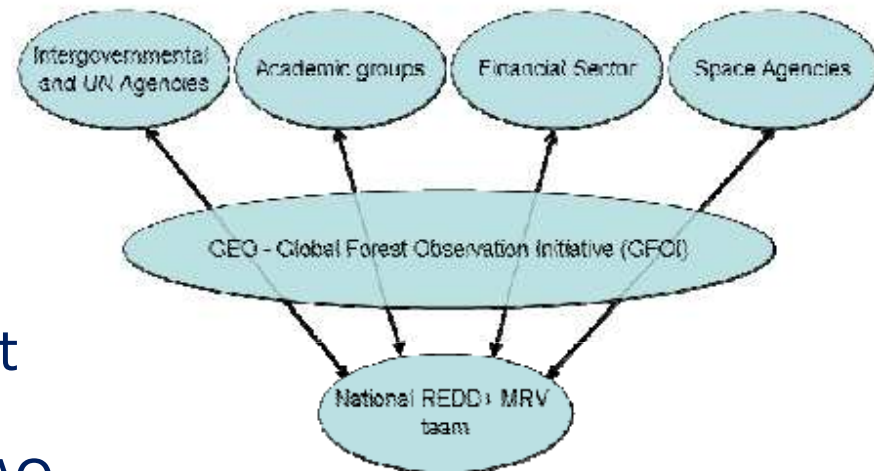
- The Global Forest Observation Initiative (GFOI) extends the current GEO Forest Carbon Tracking (FCT) task.
- The FCT focuses on national demonstrators and on developing and testing methods and protocols
- The operationally-focused GFOI will build on the FCT science and demonstration activities and aims at enabling and supporting the worldwide development of national forest information systems.

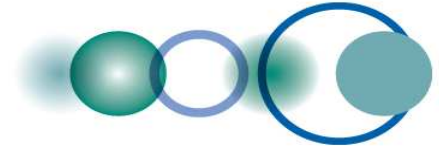




GFOI General Approach

- Not an independent production or validation body but rather a framework for coordination
- GFOI responds to governmental request of support for national activities – national forest information systems development and operation and reporting commitments via UNFCCC and FAO
- Consistent with GEO Data Sharing principles
- GFOI Methods and Protocols expected to be developed through a formal GEO document process including GEO government endorsement

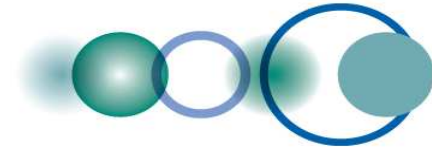




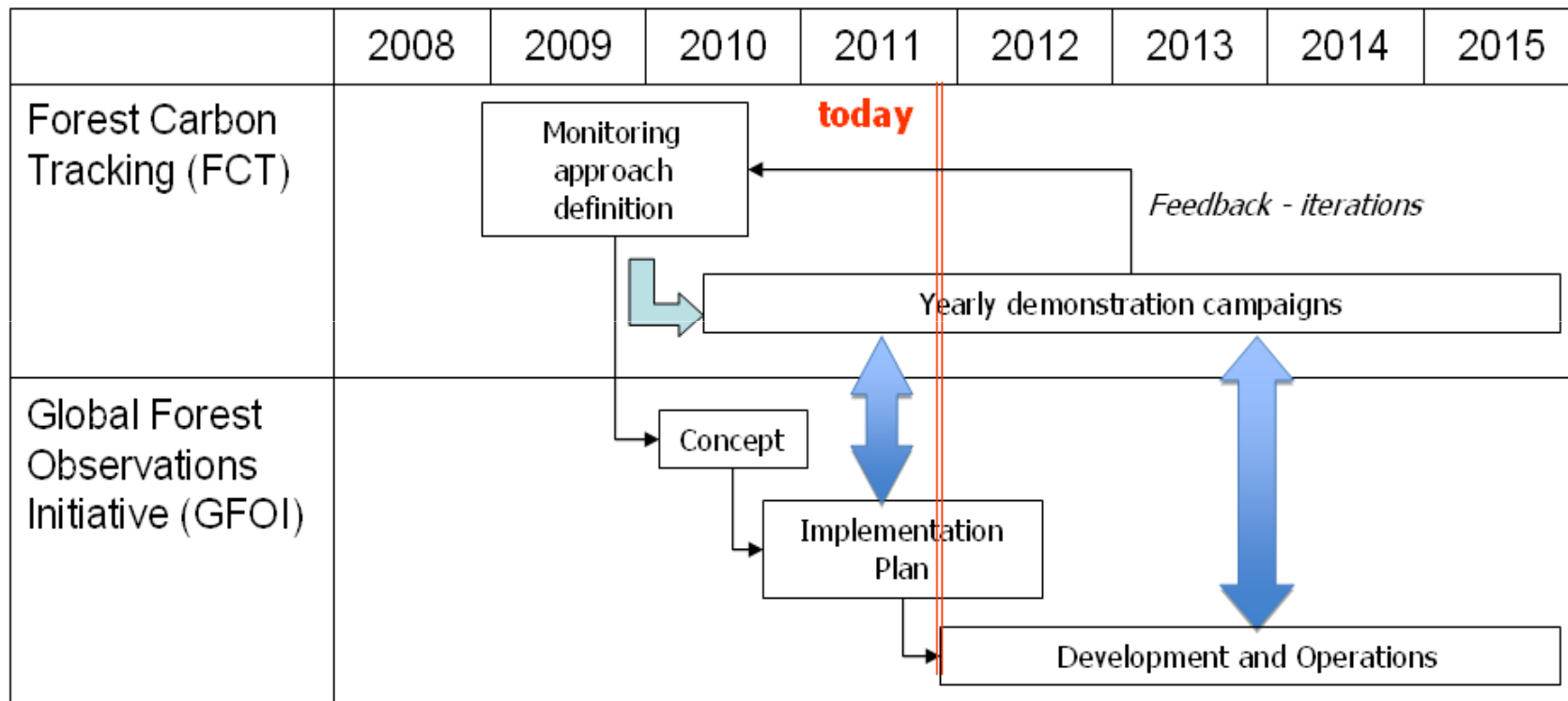
GFOI objectives

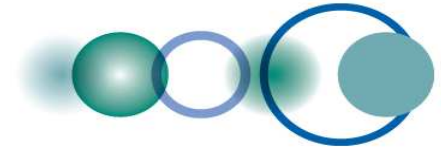
- foster the sustained availability of observations for national forest monitoring systems and assist countries to make the best use these observations;
- support governments that are establishing national systems by providing a platform for coordinating observations, providing assistance and guidance on utilizing observations, developing methods and protocols, and
- promoting ongoing research and development: the GFOI will seek continuous improvements in the use of observations and the uptake of current forest carbon science





Implementation Phases





Thank you

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www.earthobservations.org

www.geo-fct.org

